

MELDAS Series

FR-SF PLG Adjustment using DMM

USA-E99651-001A

MITSUBISHI ELECTRIC AUTOMATION

USA

Purpose:

The purpose of this procedure is to allow Service Engineers and end user to perform PLG feedback device adjustment using DMM

Overview:

PLG device is used in spindle drive system as feed back device that monitors the speed of the motor shaft and the direction of shaft rotation. Often, times it becomes necessary to perform adjustment especially in case when there is:

- An excessive speed deflection error (AL-23)
- Spindle speed fluctuation
- When replacing PLG device
- Commanded speed is different than actual spindle speed

Parts Needed:

1. Digital Multi Meter (DMM) with leads
2. Small flat head Screw driver for adjusting

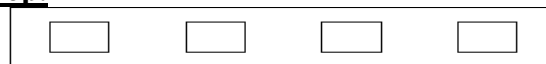
Instructions:

I. Open Loop

A. Set the drive in Open Loop (*Parameter 00 to a 1*)

1. Locate the 4 push buttons below the 6 seven segment Led's
2. Press the left-hand button (**MODE**) several times until the display reads E1
3. Press the 3rd button (**DOWN**) 1 time and the display now reads 000000
4. Press the 4th button (**SET**) 1 time and the first two zeros will begin flashing
5. Press the 2nd button (**UP**) 1 time and the last zero changes to a 1
6. Press the 4th button again and the first two zeros stops flashing
7. The display should now read **000001**. (*This indicates that parameter 00 is set to a 1*).

Note: After setting the drive in open loop, do not power off or reset drive. The machine will default to close loop.



MODE UP DOWN SET

B. Manually Run spindle drive

1. Give the spindle a forward command
2. Slowly bring the spindle drive up to about 500 RPM

II. Adjusting PLG Using DMM

A. Perform Amplitude Adjustment

1. Open the spindle motor junction box and locate PLG Pre-Amp board
2. Place DMM in AC voltage range
3. Connect negative meter lead to PGA/AGA on PLG Pre-Amp board
4. For **Phase A**- Connect positive lead to **PA** on PLG Pre-Amp board
5. Adjust **VR2** so that the meter reads **+1.0605 +/- 30 mVAC**
6. For **Phase B**- Connect positive meter lead to **PB** on PLG Pre-Amp board
7. Adjust **VR4** so that the meter reads **+1.0605 +/- 30m VAC**

Note: if you cannot adjust the potentiometers to reach these values, then the sensor gap must be adjusted. Move the sensor farther from the gear to reduce the Voltage and closer to gear to increase the voltage. If either PA or PB reads 0VAC then PLG is defective and must be replaced. The standard gap setting for sensor to detection gear is 0.152mm (.006in).

B. DC Offset Adjustment

1. Phase A Adjustment

- a. Put the DMM in DC mill-volt range
- b. Connect negative meter lead to PGA / AGA on PLG Pre-Amp board
- c. Connect Positive meter lead to PA on PG Pre-Amp board
- d. Adjust **VR1** so that the meter reads **0.00 +/- 10m VDC**

2. Phase B Adjustment

- a. Put the DMM in DC mill-volt range
- b. Connect negative meter lead to PGA / AGA on PLG Pre-Amp board
- c. Connect Positive meter lead to PB on PG Pre-Amp board
- d. Adjust **VR3** so that the meter reads **0.00 +/- 10m VDC**

Appendix:

PLG Pre-Amp Picture

